

FIG. 1A2



FIG. 1A3



FIG. 1A1



FIG. 1B2

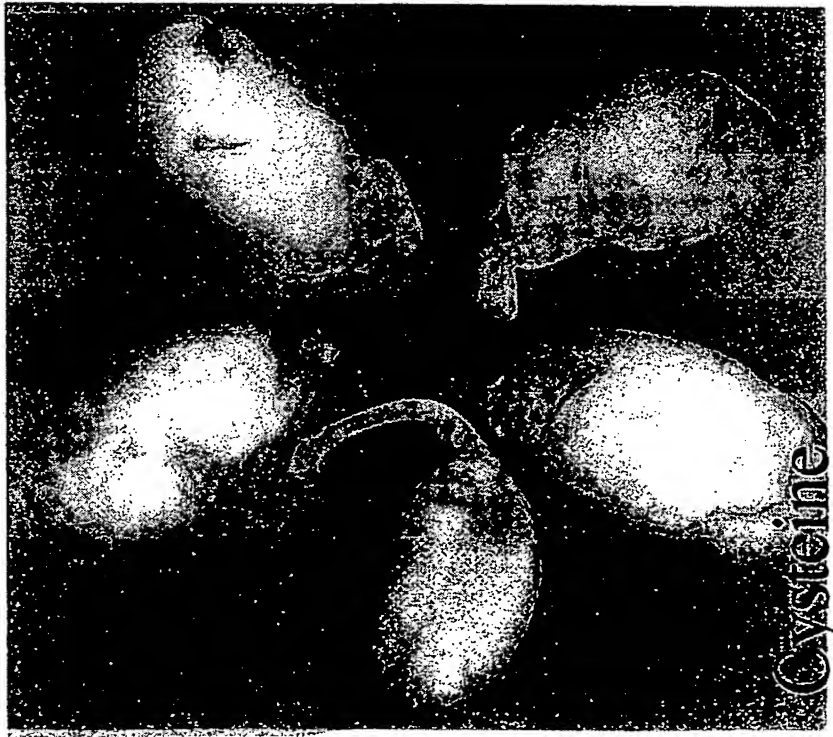
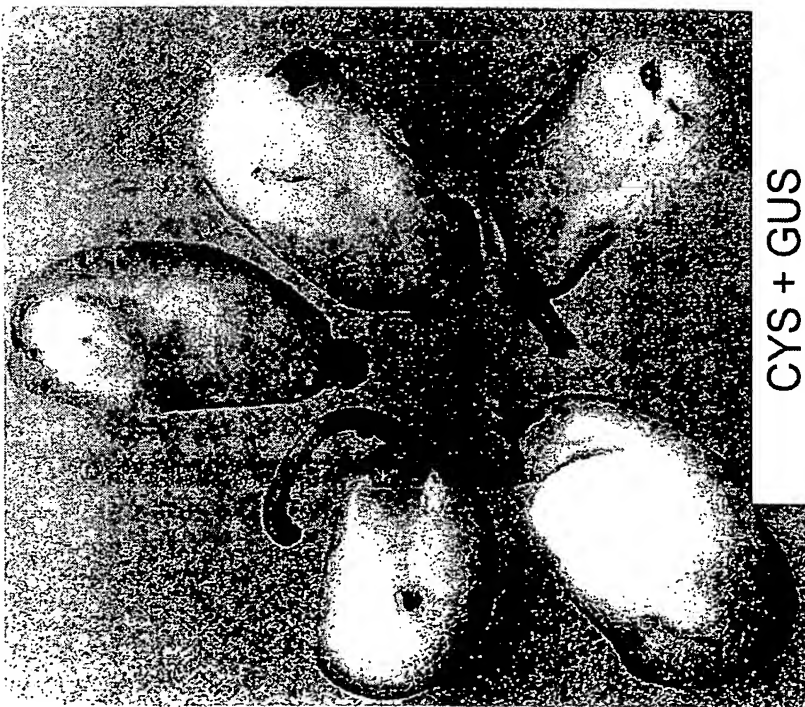


FIG. 1B1



CYS + GUS

FIG. 1B3



0 mg/l CYS + GUS

FIG. 1B4

Agrobacteria infection of soybean explants 5 days after co-culture									
Exp. #1	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Cysteine 0	Bert	AGL1	25	x	x				
Cysteine 100	Bert	AGL1	25				x	x	
Cysteine 200	Bert	AGL1	25			x	x		
Cysteine 300	Bert	AGL1	25				x	x	
Cysteine 400	Bert	AGL1	25					x	
Exp. #2	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Cysteine 0	MN1301	AGL1	21		x				
Cysteine 0	MN1301	AGL1	25		x				
Cysteine 100	MN1301	AGL1	21				x	x	
Cysteine 100	MN1301	AGL1	25				x	x	
Cysteine 200	MN1301	AGL1	21		x				
Cysteine 200	MN1301	AGL1	25					x	
Cysteine 300	MN1301	AGL1	21					x	x
Cysteine 300	MN1301	AGL1	25				x	x	
Cysteine 400	MN1301	AGL1	21				x	x	
Cysteine 400	MN1301	AGL1	25				x	x	
Exp. #3	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Cysteine 0	MN0901	AGL1	4/22		x				
Cysteine 0	MN0901	AGL1	4/25	x	x				
Cysteine 0	MN0901	AGL1	28/22			x	x		
Cysteine 0	MN0901	AGL1	28/25			x			
Cysteine 100	MN0901	AGL1	4/22			x			
Cysteine 100	MN0901	AGL1	4/25				x		
Cysteine 100	MN0901	AGL1	28/22				x	x	
Cysteine 100	MN0901	AGL1	28/25				x	x	
Cysteine 200	MN0901	AGL1	4/22			x	x		
Cysteine 200	MN0901	AGL1	4/25					x	
Cysteine 200	MN0901	AGL1	28/22			x	x		
Cysteine 200	MN0901	AGL1	28/25				x		
Cysteine 300	MN0901	AGL1	4/22					x	
Cysteine 300	MN0901	AGL1	4/25				x	x	

FIG. 1C

Cysteine 300	MN0901	AGL1	28/22					x	x
Cysteine 300	MN0901	AGL1	28/25					x	
Cysteine 400	MN0901	AGL1	4/22					x	x
Cysteine 400	MN0901	AGL1	4/25					x	x
Cysteine 400	MN0901	AGL1	28/22						x
Cysteine 400	MN0901	AGL1	28/25						x
Exp. #4	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Cysteine 0L0S	Bert	AGL1	28			x			
Cysteine 0L0S	Bert	AGL1	4		x				
Cysteine 400L0S	Bert	AGL1	28		x				
Cysteine 400L0S	Bert	AGL1	4		x				
Cysteine 0L400S	Bert	AGL1	28					x	
Cysteine 0L400S	Bert	AGL1	4				x		
Cysteine 400L400S	Bert	AGL1	28					x	x
Cysteine 400L400S	Bert	AGL1	4					x	x
Exp. #5	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Cysteine 0L0S	MN0901	AGL1	25			x			
Cysteine 400L0S	MN0901	AGL1	25			x			
Cysteine 0L400S	MN0901	AGL1	25						x
Cysteine 400L400S	MN0901	AGL1	25						x
Cysteine 400L400S	MN0901	AGL1	21						x
Cysteine 0L0S	Granite	AGL1	25		x				
Cysteine 400L0S	Granite	AGL1	25		x				
Cysteine 0L400S	Granite	AGL1	25				x		

FIG. 1D

Cysteine 400L400S	Granite	AGL1	25				x	x	
Cysteine 0L0S	MN1401	AGL1	25		x				
Cysteine 400L0S	MN1401	AGL1	25		x				
Cysteine 0L400S	MN1401	AGL1	25				x		
Cysteine 400L400S	MN1401	AGL1	25				x		
Exp. #6	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Cysteine 0L0S	MN1301	AGL1	25			x			
Cysteine 400L0S	MN1301	AGL1	25		x				
Cysteine 0L400S	MN1301	AGL1	25					x	
Cysteine 400L400S	MN1301	AGL1	25					x	
Exp. #7	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Cysteine 0L0S	Bert	AGL1	25		x				
Cysteine 0L400S	Bert	AGL1	25					x	x
Cysteine 0L600S	Bert	AGL1	25					x	x
Cysteine 0L800S	Bert	AGL1	25					x	
Cysteine 0L1000S	Bert	AGL1	25					x	
Exp. #8	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Cysteine 400L400S	MN0901	NONE	25	x					
Cysteine 400L0S	MN0901	LBA4404	25			x	x		
Cysteine 400L400S	MN0901	LBA4404	25						xx

FIG. 1E

Cysteine 400L0S	MN0901	AGL1	25		x				
Cysteine 400L400S	MN0901	AGL1	25					x	
Cysteine 400L0S	MN1801	AGL1	25		x				
Cysteine 400L400S	MN1801	AGL1	25				x	x	
Cysteine 400L0S	MN0301	AGL1	25		x				
Cysteine 400L400S	MN0301	AGL1	25				x		
Cysteine 400L0S	Lambert	AGL1	25		x				
Cysteine 400L400S	Lambert	AGL1	25				x	x	
Exp. #9	Genotype	Agrobact	Temps °C	None	very low	low	medium	good	superior
Methionine	MN0901	LBA4404	25		x				
Methionine	MN0901	LBA4404	22			x			
Methionine	MN0901	AGL1	25		x				
Methionine	MN0901	AGL1	22		x				
Glutathione	MN0901	LBA4404	25	x					
Glutathione	MN0901	LBA4404	22		x				
Glutathione	MN0901	LBA4404	25	x					
Glutathione	MN0901	LBA4404	22		x				
Cysteine 400	MN0901	LBA4404	22						x
Cysteine 400	MN0901	LBA4404	25						x
Cysteine 400	MN0901	AGL1	22					x	
Cysteine 400	MN0901	AGL1	25					x	
Cysteine 0	MN0901	LBA4404	22			x			
Cysteine 0	MN0901	LBA4404	25			x			

FIG. 1F

Cysteine 0	MN0901	AGL1	22		x				
Cysteine 0	MN0901	AGL1	25		x				
Cysteine 0	Lambert	AGL1	22		x				
Cysteine 0	Lambert	AGL1	25		x				
Cysteine 400	Lambert	AGL1	22						
Cysteine 400	Lambert	AGL1	25			x			

FIG. 1G

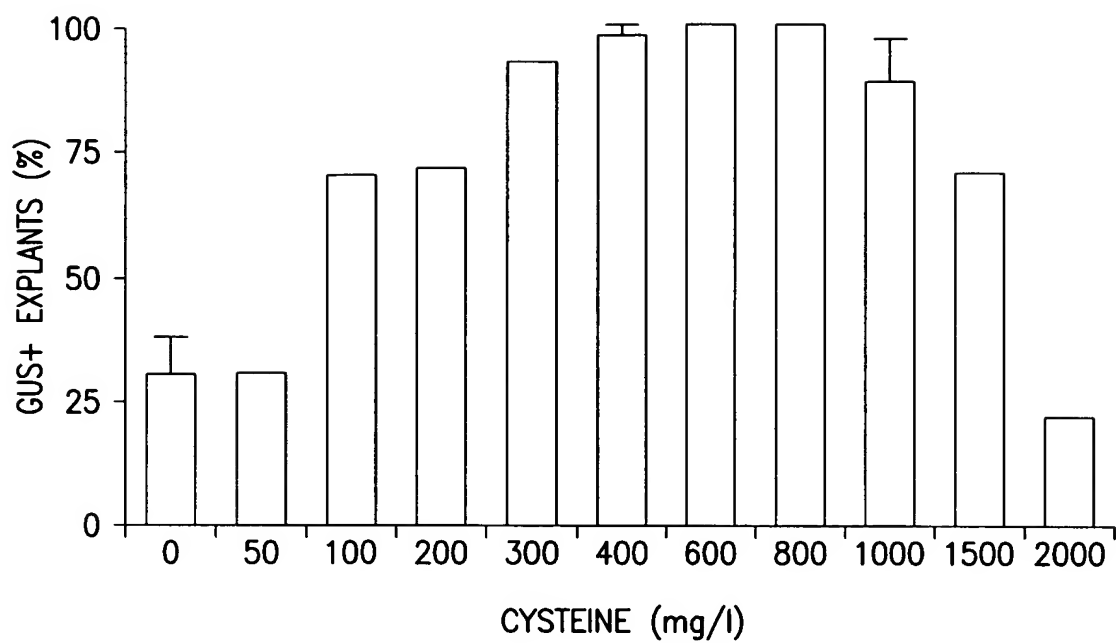


FIG. 1H

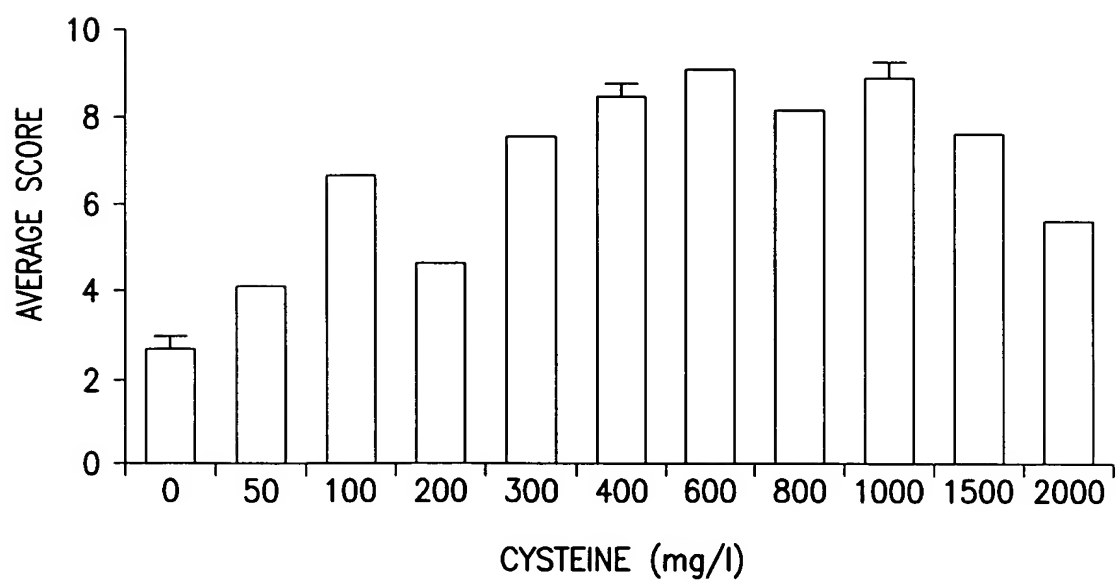


FIG. 1I

Bert	Cysteine Experiment #1						
					% Explants with shoots	\bar{x}	
0 mg Cysteine	3	0	0	6	0%	2.9	
	0	1	0	10			
	8	2	6	2			
	4	0	2				
50 mg Cysteine	6	8	4	2	6.25%	4.0	
	7 + 2 shoots/events	2	5	10			
	0	9	2	1			
	3	6	0	0			
100 mg Cysteine	8 + 1 shoot	5 + 4 shoots	2	0	20%	4.3	
	2	9 + 1 shoot	4	5			
	6	4	4	7			
	3	5	1				
150 mg Cysteine	14	3	2	15	14.3	6.5	
	8	9	4	12 + 1 shoot			
	11	2	3				
	3	7	8 + 2 shoots				
200 mg Cysteine	14	9	>18 + 4 shoots	10	18.7	14.9	
	12	>23	11	17			
	15 + >5 cluster	17	>30	19 + 1 shoot			
	10	6	12	16			

FIG. 2

MN1301	Cysteine Experiment #1				% Explants with shoots	\bar{x}
0 mg Cysteine	0	2	0		0%	1.9
	1	7				
	3	0				
	3	1				
50 mg Cysteine	5	5			0%	9.4
	7	6				
	12	13				
	15	12				
100 mg Cysteine	14	17 + 1 shoot	26		9%	15.6
	12	>23	29			
	16	5	18			
	12	0				
150 mg Cysteine	1	15	26	17	0%	11.8
	8	17	23	3		
	19	4	18	5		
	5	1	20	7		
200 mg Cysteine	16	8	16		0%	18.2
	27	>20	4			
	23	25				
	28	>15				

FIG. 3

	4°C pre-treatment		No pre-treatment		%	\bar{x}
	22°C incubation	25°C incubation	22°C incubation	25°C incubation		
0 mg Cysteine	4 1 5 18 $\bar{x} = 7$	0 7 8 + 1 shoot 1 $\bar{x} = 4$	9 5 2 8 $\bar{x} = 6$	6 6 1 12 $\bar{x} = 6.2$	6.25%	5.9
50 mg Cysteine	13 8 14 4 $\bar{x} = 4.7$	3 11 8 7 $\bar{x} = 7.2$	14 11 12 17 $\bar{x} = 13.5$	6 4 9 7 $\bar{x} = 6.5$	0%	4.2
100 mg Cysteine	5 1 16 7 $\bar{x} = 7.2$	2 4 5 2 $\bar{x} = 3.2$	0 11 16 18 + 1 shoot $\bar{x} = 11.2$	13 19 19 7 $\bar{x} = 14.5$	6.25%	9.0
150 mg Cysteine	12 14 9 12 $\bar{x} = 11.7$	9 19 22 15 $\bar{x} = 16.2$	>16 + >15 shoots 11 + 1 shoot 6 16 $\bar{x} = 12.2$	16 + >5 shoots 24 20 12 $\bar{x} = 19$	18.7%	14.7
200 mg Cysteine	19 14 10 9 $\bar{x} = 13$	9 14 12 14 $\bar{x} = 12.2$	24 12 16 16 $\bar{x} = 17$	13 14 25 6 $\bar{x} = 14.5$	0%	14.1

FIG. 4

Bert Cysteine Experiment #2

Bert	0 mg Cysteine Liquid Co-culture media		200 mg Cysteine Liquid Co-culture media		%	\bar{x}
	5 mg/L ppt	3.33 mg/L ppt	5 mg/L ppt	3.33 mg/L ppt		
0 mg Cysteine Solid Media	4 1 0 2 + 2 shoots 4 0 $\bar{x} = 1.8$	2 3 4 4 5 2 $\bar{x} = 3.3$	2 1 3 1 4 3 $\bar{x} = 2.3$	7 1 3 0 3 3 $\bar{x} = 2.8$	4.2%	2.5
200 mg Cysteine Solid Media	9 14 + 8 shoots MASS 11 >24 + 5 shoots 35 + 1 shoot 7 $\bar{x} = 20.1$	5 >25 >27 + 1 shoot 27 11 >18 $\bar{x} = 18.8$	3 8 + 2 shoots 4 17 20 >15 $\bar{x} = 11.1$	12 7 11 8 19 + 1 shoot 6 $\bar{x} = 10.5$	25%	15.1

FIG. 5

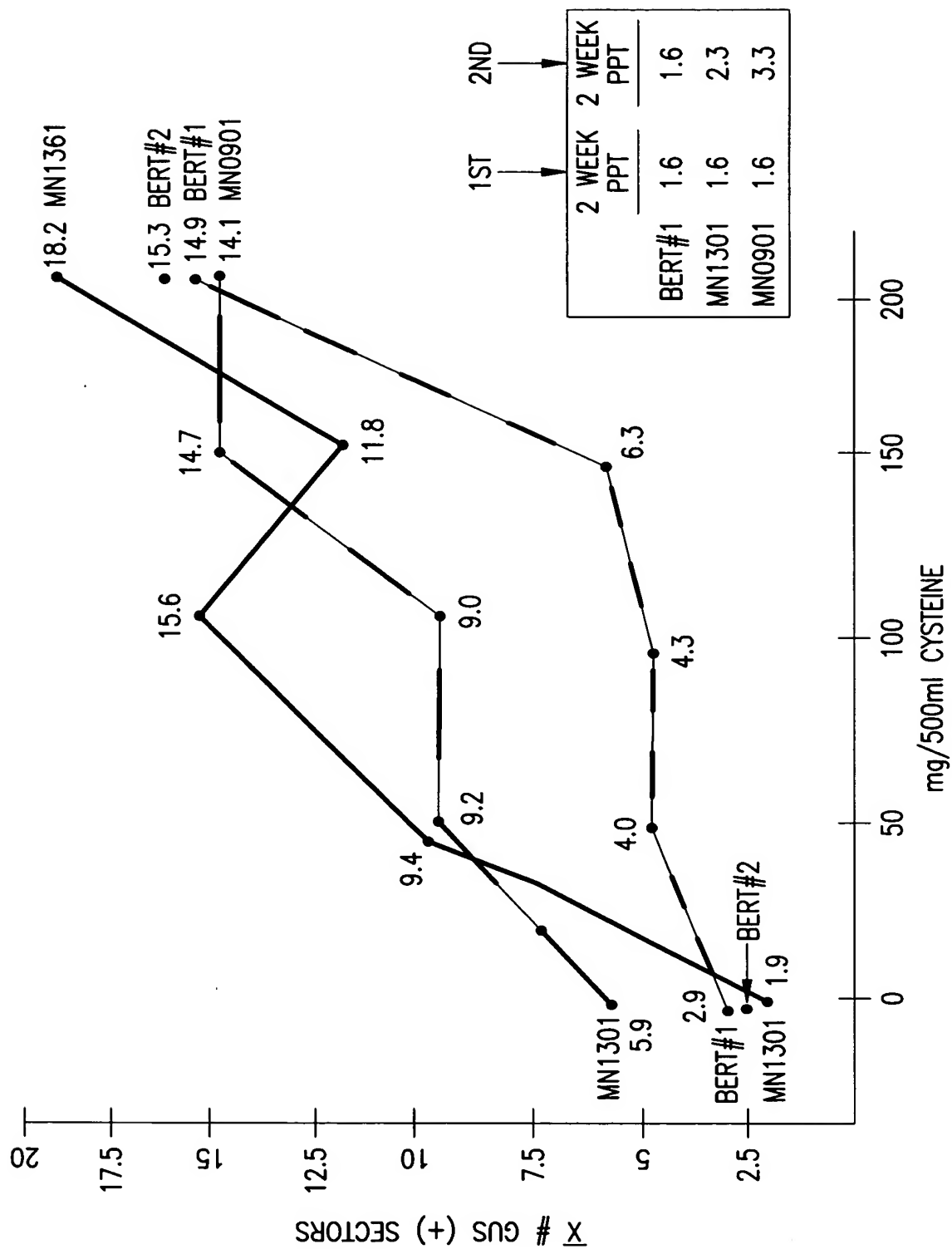


FIG. 6

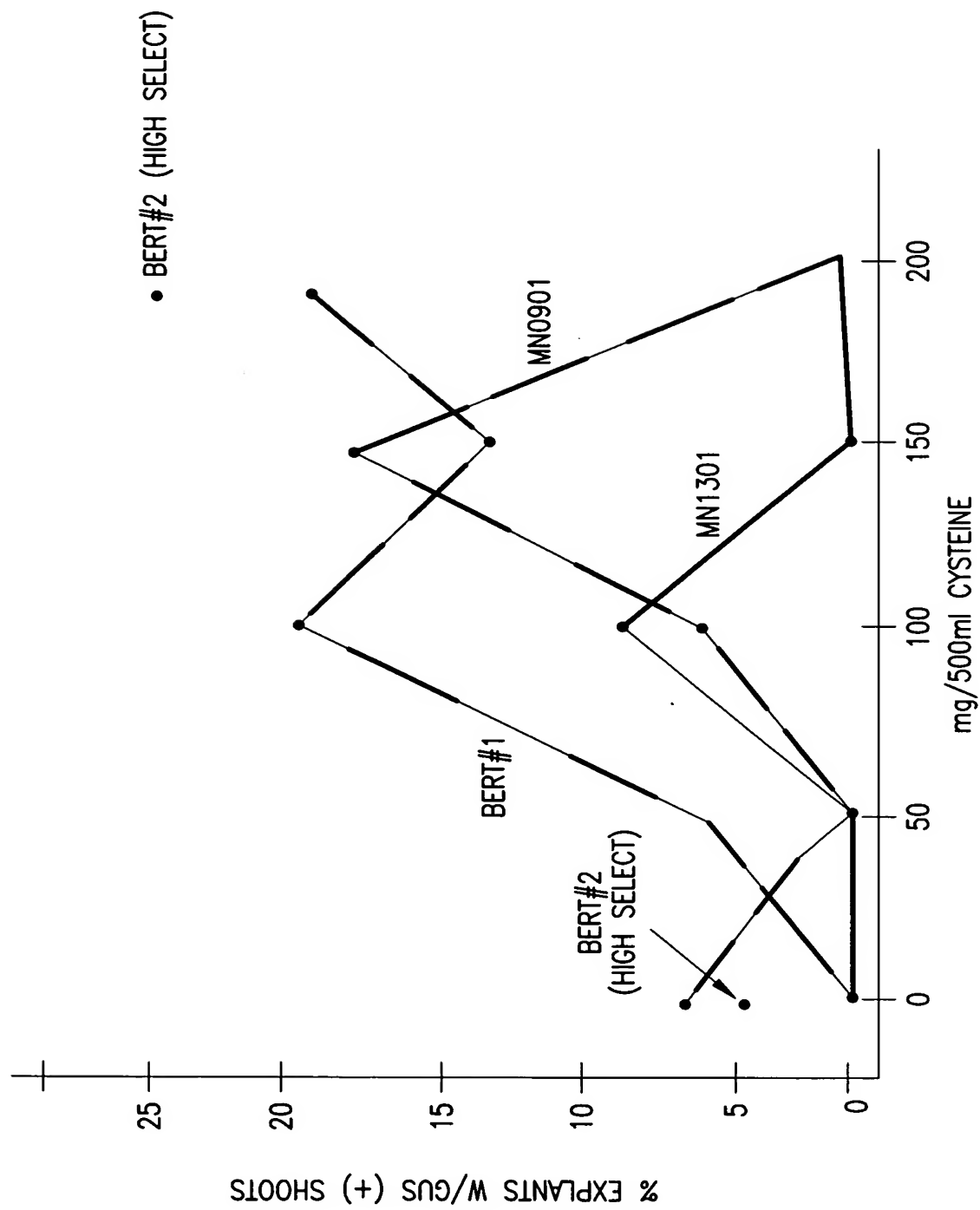


FIG. 7

BERT GENOTYPE HERBICIDE SELECTION:
PPT % EXPLANTS W/GUS (+) SHOOTS AT 4 WEEKS

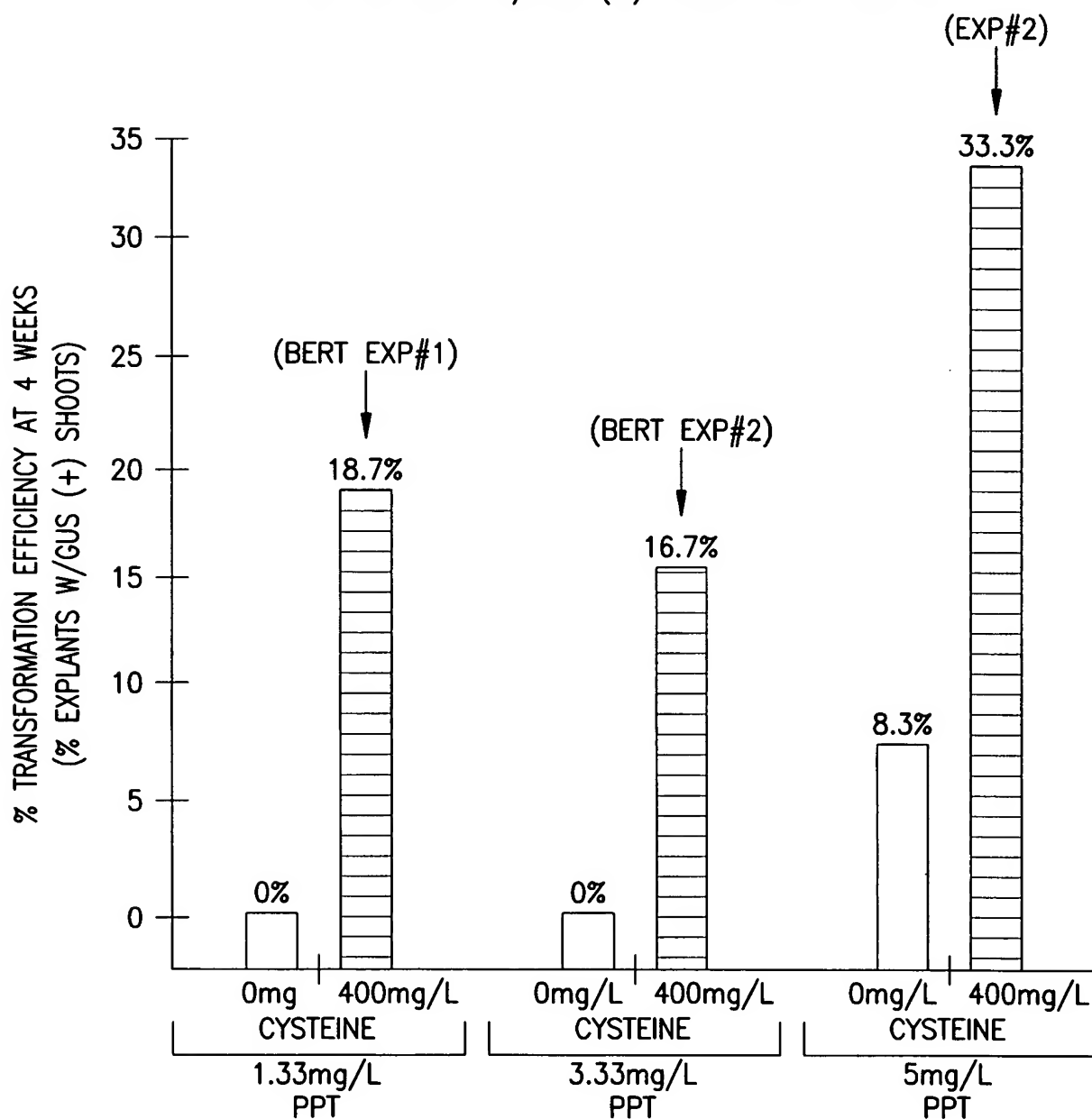


FIG. 8

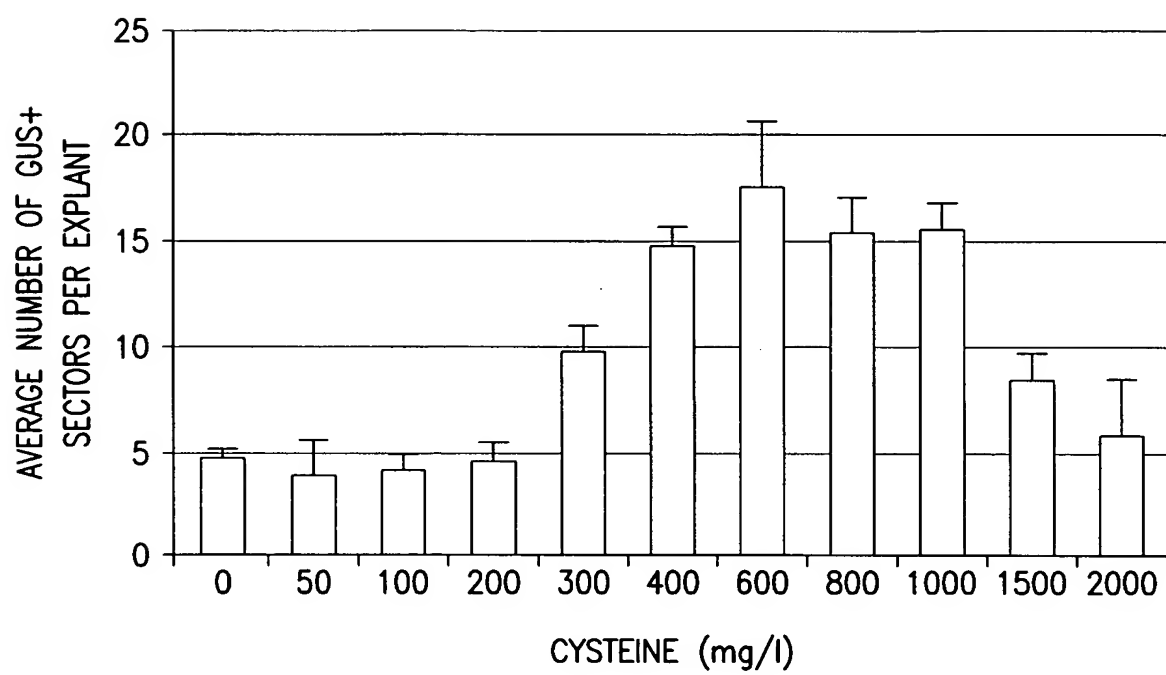


FIG. 9

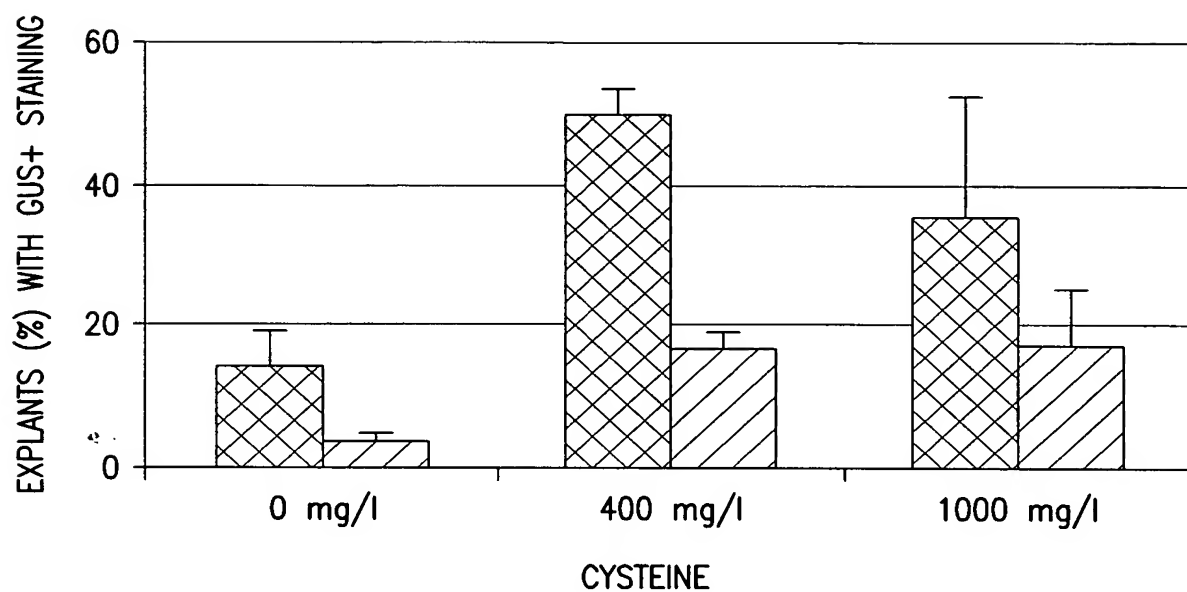


FIG. 10A

CYSTEINE mg/l	# EXPLANTS WITH SHOOT PRIMORDIA/ TOTAL EXPLANTS
0	4/88
50	0/4
100	1/16
200	3/15
300	2/23
400	17/105
600	5/10
800	1/22
1000	7/34
1500	1/8
2000	1/3

FIG. 10B

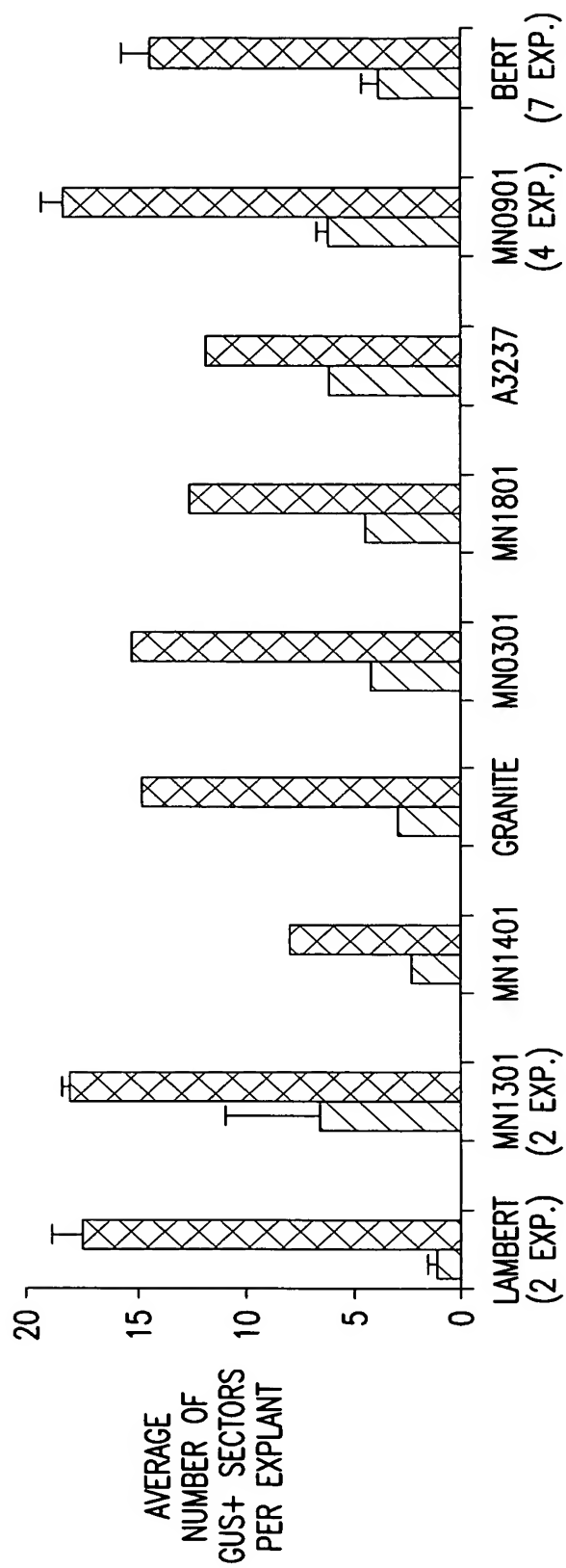


FIG. 11

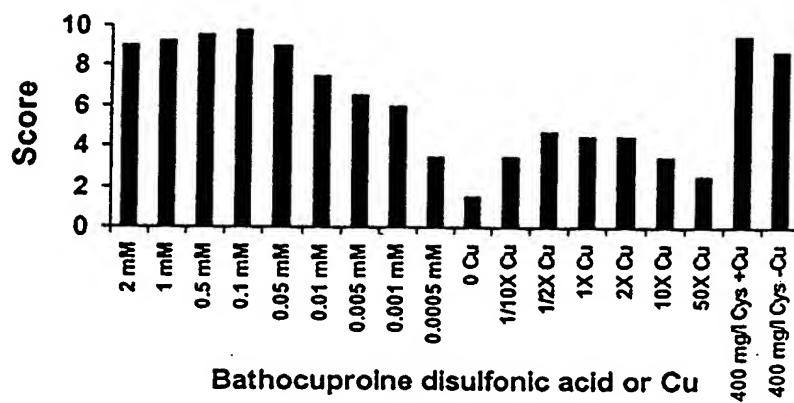


FIG. 12A

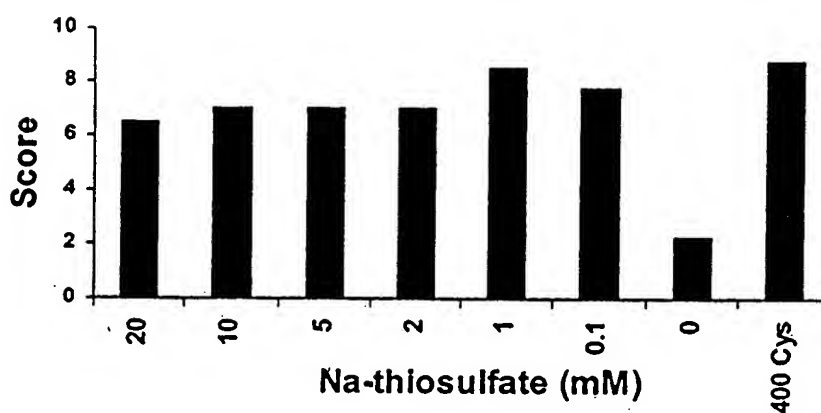


FIG. 12B

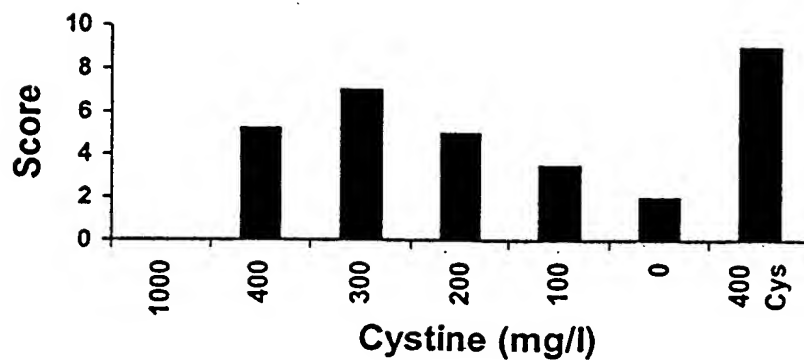


FIG. 12C

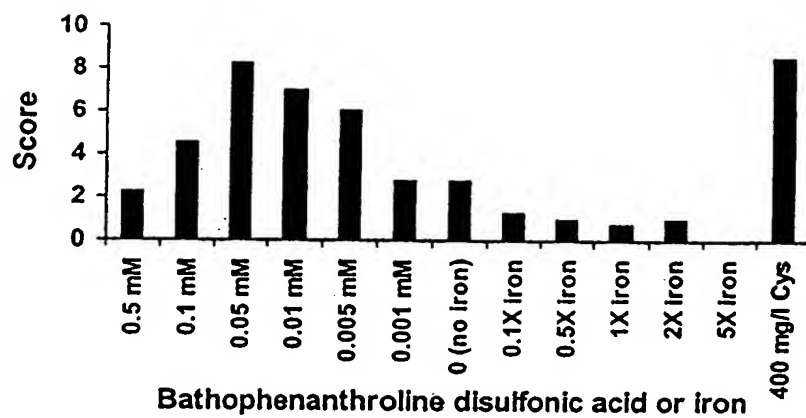


FIG. 12D

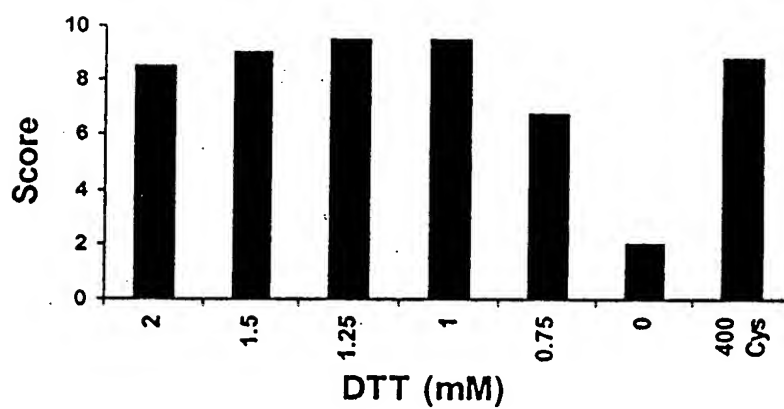


FIG. 12E

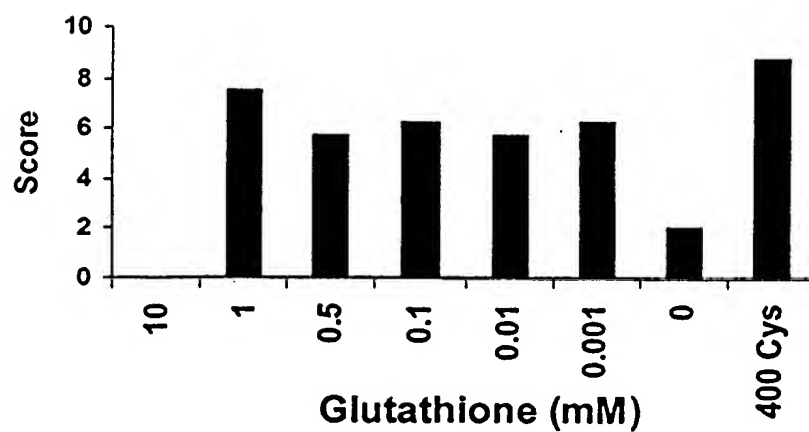


FIG. 12F

Bert	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	190	10	0	100/180 = 55.5%	180		
400 mg/l Cysteine	190	10	0	160/180 = 88.8%	180	705,641	705,641

* Includes those explants with zero shoot growth

A3237	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	188	10	0	118/178 = 66.3%	178	644	644
400 mg/l Cysteine	188	10	0	151/178 = 84.8%	178	657, 655, 643	657, 655, 643

* Includes those explants with zero shoot growth

Bert	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	205	10	0	143/195 = 73%	195		
1000 mg/l Cysteine	210	10	0	160/200 = 80%	200	525, 527, 666, 627, 620, 611, 590, 564, 661	525, 527, 666, 627

* Includes those explants with zero shoot growth

FIG. 13A

A3237	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	190	10	75	NA contamin.	105		
1000 mg/l Cysteine	195	10	56	NA contamin.	129	630	630

* Includes those explants with zero shoot growth

** Many more explants tossed throughout experiment, any % efficiency will be underestimated.

Hygro #1	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	213	7	4	164/202 = 81.2%	202		
400 mg/l Cysteine	213	7	2	182/204 = 89.2%	204	694, 695	694, 695

* Includes those explants with zero shoot growth

Hygro #2	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	219	7	39	1145/173 = 83.8%	173		
400 mg/l Cysteine	220	7	17	179/196 = 91.3%	196		

* Includes those explants with zero shoot growth

FIG. 13B

Hygro #3 Bert	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	100	7	5	77/88 = 87.5%	88		
400 Cys	107	7	0	88/100 = 88%	100		
1 mM DTT	105	7	2	75/96 = 78%	96	703	703
400 Cys + 1 mM DTT	100	7	6	77/87 = 88.5%	87		
400 Cys + 0.3 mM DTT	25	7	0	17/18 = 94.4%	18		

* Includes those explants with zero shoot growth

Hygro #4 Bert	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	116	7	38	67/71 = 94.4%	71		
400 Cys	116	7	38	67/71 = 94.4%	71		
1 mM DTT	116	7	11	79/98 = 80.6%	98		
400 Cys + 1 mM DTT	116	7	29	73/80 = 91.25%	80	696, 699	696, 699

* Includes those explants with zero shoot growth

FIG. 13C

Hygro #5 Bert	# Explants Inoculated	# Explants Sacrificed	# Explants Contaminated	% Shoot Formation	Total # Explants*	Elongated Shoots	Independent Events
0 control	110	7	1	81/102 = 79.1%	102		
1000 Cys	110	7	1	91/102 = 89.2%	102		
1 mM DTT	110	7	3	77/100 = 77%	100		
1000 Cys + 1 mM DTT	113	7	16	88/104 = 84.6%	104		

* Includes those explants with zero shoot growth

FIG. 13D